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### **CLAIM AMENDMENTS**

# 1. (Currently Amended) A compound of formula (I):

$$A - Y^1 - L - Y^2 - C - X^2 - H$$
(I)

wherein

A is a cyclic moiety selected from the group consisting of  $C_{3-14}$  cycloalkyl, 3-14 membered heterocycloalkyl,  $C_{4-14}$  cycloalkenyl, 3-14 membered heterocycloalkenyl, aryl, heteroaryl; the cyclic moiety being optionally substituted with 1-3 substituents, each of which is independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, and alkylsulfonyl;

each of  $X^1$  and  $X^2$ , independently, is O or S; each of  $Y^1$  and  $Y^2$ , independently, is -CH<sub>2</sub>-, -O-, -S-, -N(R<sup>a</sup>)-, -N(R<sup>a</sup>)-C(O)-O-, -O-C(O)-N(R<sup>a</sup>)-, -N(R<sup>a</sup>)-C(O)N(R<sup>b</sup>)-, -O-C(O)-O-, or a bond; each of R<sup>a</sup> and R<sup>b</sup>, independently being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

L is a straight  $C_{3-12}$  hydrocarbon chain optionally containing at least one double bond, at least one triple bond, or at least one double bond and one triple bond; said hydrocarbon chain being optionally substituted with  $C_{1-4}$  alky1,  $C_{2-4}$  alkenyl,  $C_{2-4}$  alkynyl,  $C_{1-4}$  alkoxy, hydroxyl, halo, amino, nitro, cyano,  $C_{3-5}$  cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6

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membered heteroaryl,  $C_{1.4}$  alkylcarbonyloxy,  $C_{1.4}$  alkyloxycarbonyl,  $C_{1.4}$  alkylcarbonyl, or formyl; and further being optionally interrupted by -O-, -N(Rc)-, -N(Rc)-C(O)-O-, -O-C(O)-(Rc)-, -N(Rc)-C(O)-N(Rd)-, or -O-C(O)-O-; each of Rc and Rd, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl; provided that when L contains two or more double bonds, the double bonds are not adjacent to each other; that when L contains three double bonds, said hydrocarbon chain is further substituted with  $C_{1.4}$  alkyl,  $C_{2.4}$  alkenyl,  $C_{2.4}$  alkynyl,  $C_{1.4}$  alkoxy, hydroxyl, halo, amino, nitro, cyano,  $C_{3.5}$  cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl,  $C_{1.4}$  alkylcarbonyloxy,  $C_{1.4}$  alkyloxycarbonyl,  $C_{1.4}$  alkylcarbonyl, or formyl; and further provided that when L contains zero double bonds, one double bond, or two conjugated double bonds and A is substituted phenyl or unsubstituted aryl,  $Y^1$  is not a bond or  $CH_2$ , and  $Y^2$  is not a bond or  $CH_2$ ; or a salt thereof.

- 2. (Original) The compound of claim 1, wherein X<sup>1</sup> is O.
- 3. (Original) The compound of claim 1, wherein  $X^2$  is O.
- 4. (Original) The compound of claim 1, where each of  $X^1$  and  $X^2$  is O.
- 5. (Original) The compound of claim 1, wherein each of  $Y^1$  and  $Y^2$ , independently, is -CH<sub>2</sub>, -O-, -N( $\mathbb{R}^a$ )-, or a bond.
- 6. (Canceled)

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7. (Original) The compound of claim 1, wherein L is an unsaturated  $C_{4-8}$  hydrocarbon containing

at least one double bond and no triple bond, said unsaturated hydrocarbon chain being optionally

 $substituted\ with\ C_{1-2}\ alkyl,\ C_{1-2}\ alkoxy,\ hydroxyl,\ -NH_2,\ -NH(C_{1-2}\ alkyl),\ or\ -N(C_{1-2}\ alkyl)_2,\ or\ -$ 

 $-N(C_{1-2} alkyl)_2$ .

8. (Original) The compound of claim 7, wherein the double bond is in trans configuration.

9-11. (Canceled)

12. (Original) The compound of claim 1, wherein A is phenyl, naphthyl, indanyl, or

tetrahydronaphthyl.

13. (Previously Presented) The compound of claim 1, wherein A is phenyl optionally

substituted with 1-3 substituents each of which is independently selected from the group

consisting of alkyl, alkenyl, hydroxyl, hydroxylalkyl, halo, haloalkyl, and amino.

14-15. (Canceled)

16. (Original) The compound of claim 13, wherein L is an unsaturated C<sub>4-8</sub> hydrocarbon chain

containing only double bonds in trans configuration, said unsaturated hydrocarbon chain being

optionally substituted with C<sub>1,2</sub> alkyl, C<sub>1,2</sub> alkoxy, hydroxyl, -NH<sub>2</sub>, -NH(C<sub>1,2</sub> alkyl), or

 $-N(C_{1-2} alkyl)_2$ .

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17. (Original) The compound of claim 16, wherein  $X^1$  is O;  $X^2$  is O; and each of  $Y^1$  and  $Y^2$ , independently, is -CH<sub>2</sub>-, -O-, -N( $\mathbb{R}^a$ )-, or a bond.

## 18-21. (Canceled)

### 22. (Currently Amended): A compound of formula (I):

**(I)** 

wherein

A is a cyclic moiety selected from the group consisting of aryl and heteroaryl; the c~ moiety being optionally substituted with alkyl, alkenyl, alkynyl, hydroxylalkyl, or amino;

each of  $X^1$  and  $X^2$ , independently, is O or S;

each of Y<sup>1</sup> and Y<sup>2</sup>, independently, is -CH<sub>2</sub>-, -O-, -S-, -N(R<sup>a</sup>)-, -N(R<sup>a</sup>)-C(O)-O-,

-O-C(O)-N( $R^a$ )-, -N( $R^a$ )-C(O)-N( $R^b$ )-, -O-C(O)-O-, or a bond; each of  $R^a$  and  $R^b$ , independently, being hydrogen, alkyl, hydroxylalkyl, or haloalkyl;

L is a straight  $C_{3-12}$  hydrocarbon chain optionally containing at least one double bond, at least one triple bond, or at least one double bond and one triple bond; said hydrocarbon chain being optionally substituted with  $C_{1-4}$  alkyl,  $C_{2-4}$  alkenyl,  $C_{2-4}$  alkynyl,  $C_{1-4}$  alkoxy, or amino, and further optionally interrupted by -O- or -N( $R^c$ )-, where  $R^c$  is hydrogen, alkyl, hydroxylalky, or

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haloalkyl; provided that when L contains two or more double bonds, the double bonds are not

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adjacent to each other; that when L contains three double bonds, said hydrocarbon chain is

substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, or amino; and further provided

that when L contains zero double bonds, one double bond, or two conjugated double bonds and

A is C<sub>1.4</sub> alkyl phenyl, C<sub>1.4</sub> alkoxy phenyl, or unsubstituted aryl, Y<sup>1</sup> is not a bond or CH<sub>2</sub>, and Y<sup>2</sup>

is not a bond or CH<sub>2</sub> or a salt thereof.

23-24. (Canceled)

25. (Original) The compound of claim 22, wherein L is an unsaturated  $C_{4.8}$  hydrocarbon chain

containing only double bonds in trans configuration, said unsaturated hydrocarbon chain being

optionally substituted with C<sub>1,2</sub> alkyl, C<sub>1,2</sub> alkoxy, hydroxyl, -NH<sub>2</sub>, -NH(C<sub>1,2</sub> alkyl), or

 $-N(C_{1-2} alkyl)_2$ .

26. (Original) The compound of claim 25, where in  $X^1$  is O;  $X^2$  is O; and each of  $Y^1$  and  $Y^2$ ,

independently, is -CH<sub>2</sub>-, -O-, N(R<sup>a</sup>)-, or a bond.

27-79. (Cancelled)

80. (Currently Amended) A pharmaceutical composition, comprising an effective amount of a

compound of formula (I):

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$$A - Y^1 - L - Y^2 - C - X^2 - H$$
 (I)

wherein

A is a cyclic moiety selected from the group consisting of C<sub>3-14</sub> cycloalkyl, 3-14 membered heterocycloalkyl, C<sub>4-14</sub> cycloalkenyl, 3-14 membered heterocycloalkenyl, aryl, and heteroaryl; the cyclic moiety being optionally substituted with 1-3 substituents, each of which is independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, and alkylsulfonyl;

each of  $X^1$  and  $X^2$ , independently, is O or S;

each of  $Y^1$  and  $Y^2$ , independently, is -CH<sub>2</sub>-, -O-, -S-, -N( $R^a$ )-, -N( $R^a$ )-C(O)-O-, -O-C(O)-N( $R^a$ )-, -N( $R^a$ )-C(O)-N( $R^b$ )-, -O-C(O)-O-, or a bond; each of  $R^a$  and  $R^b$  independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

L is a straight  $C_{3^{\circ}12}$  hydrocarbon chain containing at least one double bond, or at least one double bond and one triple bond; said hydrocarbon chain being optionally substituted with  $C_{1^{\circ}4}$  alkyl,  $C_{2^{\circ}4}$  alkenyl,  $C_{2^{\circ}4}$  alkynyl,  $C_{1^{\circ}4}$  alkoxy, hydroxyl, halo, amino, nitro, cyano,  $C_{3^{\circ}5}$  cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl,  $C_{1^{\circ}4}$  alkylcarbonyloxy,  $C_{1^{\circ}4}$  alkyloxycarbonyl,  $C_{1^{\circ}4}$  alkylcarbonyl, or formyl; and further being optionally interrupted by -O-, -N( $R^c$ )-, -N( $R^c$ )-C(O)-O-, -O-C(O)-N( $R^c$ )-, -N( $R^c$ )-C(O)-N( $R^d$ )-, or -O-C(O)-O-; each of  $R^c$  and  $R^d$ , independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

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or a salt thereof; and a pharmaceutically acceptable carrier.

- 81. (Previously Presented) The pharmaceutical composition of claim 80, wherein  $X^1$  is O.
- 82. (Previously Presented) The pharmaceutical composition of claim 80, wherein  $X^2$  is O.
- 83. (Previously Presented) The pharmaceutical composition of claim 80, where each of  $X^1$  and  $X^2$  is O.
- 84. (**Previously Presented**) The pharmaceutical composition of claim 80, wherein each of  $Y^1$  and  $Y^2$ , independently, is -CH<sub>2</sub>, -O-, -N( $\mathbb{R}^a$ )-, or a bond.
- 85. (**Previously Presented**) The pharmaceutical composition of claim 80, wherein L is an unsaturated  $C_{4-8}$  hydrocarbon chain containing at least one double bond and no triple bond, said unsaturated hydrocarbon chain being optionally substituted with  $C_{1-2}$  alkyl,  $C_{1-2}$  alkoxy, hydroxyl, -NH<sub>2</sub>, -NH( $C_{1-2}$  alkyl), or -N( $C_{1-2}$ alkyl)<sub>2</sub>, or -N( $C_{1-2}$ alkyl)<sub>2</sub>.
- 86. (**Previously Presented**) The pharmaceutical composition of claim 85, wherein the double bond is in trans configuration.
- 87. (**Previously Presented**) The pharmaceutical composition of claim 80 wherein A is phenyl, naphthyl, indanyl, or tetrahydronaphthyl.

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88. (Previously Presented) The pharmaceutical composition of claim 80,

wherein A is phenyl optionally substituted with 1-3 substituents, each of which is independently selected from the group consisting of alkyl, alkenyl, hydroxyl, hydroxylalkyl, halo, haloalkyl and amino.

- 89. (**Previously Presented**) The pharmaceutical composition of claim 80, wherein L is an unsaturated  $C_{4.8}$  hydrocarbon chain containing only double bonds in trans configuration, said unsaturated hydrocarbon chain being optionally substituted with  $C_{1-2}$  alkyl,  $C_{1-2}$  alkoxy, hydroxyl,  $-NH_2$ ,  $-NH(C_{1-2}$  alkyl), or  $-N(C_{1-2}$  alkyl)<sub>2</sub>.
- 90. (**Previously Presented**) The pharmaceutical composition of claim 89, wherein  $X^1$  is O;  $X^2$  is O; and each of  $Y^1$  and  $Y^2$ , independently, is  $-CH_2$ -, -O-,  $-N(R^a)$ -, or a bond.
- 91. (Currently Amended) A compound of formula (I):

$$A - Y^1 - L - Y^2 - C - X^2 - H$$

**(I)** 

wherein

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wherein

A is a cyclic moiety selected from the group consisting of  $C_{3-14}$  cycloalkyl, 3-14 membered heterocycloalkyl,  $C_{4-14}$  cycloalkenyl, 3-14 membered heterocycloalkenyl, aryl, and heteroaryl; the cyclic moiety being optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, or alkylsulfonyl;

each of  $X^1$  and  $X^2$ , independently, is O or S;

Y<sup>1</sup> is -CH<sub>2</sub>-, -S-, -N(R<sup>a</sup>)-, -N(R<sup>a</sup>)-C(O)-O-, -O-C(O)-N(R<sup>a</sup>)-, N(R<sup>a</sup>)-C(O)-N(R<sup>b</sup>)-,
-O-C(O)-O-, or a bond; each of R<sup>a</sup> and R<sup>b</sup>, independently, being hydrogen, alkyl, alkenyl,
alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

 $Y^2$  is -CH<sub>2</sub>-, -O-, -S-, -N(R<sup>a</sup>)-, -N(R<sup>a</sup>)-C(O)-O-, -O-C(O)-N(R<sup>a</sup>)-, -N(R<sup>a</sup>)-C(O)-N(R<sup>b</sup>)-, O-C(O)-O-, or a bond;

L is a straight  $C_{3^{\circ}6}$  hydrocarbon chain containing at least one double bond, at least one triple bond, or at least one double bond and one triple bond; said hydrocarbon chain being substituted with  $G_{1-4}$ -alkyl,  $C_{2-4}$  alkenyl,  $C_{2-4}$  alkynyl,  $C_{1-4}$  alkoxy, halo, amino, nitro, cyano,  $C_{3-5}$  cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl,  $C_{1-4}$  alkylcarbonyloxy,  $C_{1-4}$  alkyloxycarbonyl,  $C_{1-4}$  alkylcarbonyl, or formyl; and further being optionally interrupted by -O-, -N( $R^c$ )-, -N( $R^c$ )-C(O)-O-, -O-C(O)-N( $R^c$ )-, or -O-C(O)-O-; each of  $R^c$  and  $R^d$ , independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl; or a salt thereof.

92. (Previously presented) The compound of claim 91, wherein  $X^1$  is O.

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93. (Previously presented) The compound of claim 91, wherein  $X^2$  is O.

94. (Previously presented) The compound of claim 91, wherein each of  $X^1$  and  $X^2$  is O.

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- 95. (**Previously presented**) The compound of claim 91, wherein each of  $Y^1$  and  $Y^2$  independently, is  $-CH_2$ -,  $-N(R^a)$ -, or a bond.
- 96. (**Previously presented**) The compound of claim 91, wherein L is an unsaturated  $C_{4^-6}$  hydrocarbon chain containing at least one double bond and no triple bond, said unsaturated hydrocarbon chain being substituted with  $C_{1^-2}$  alkyl,  $C_{1^-2}$  alkoxy, hydroxyl, -NH<sub>2</sub>, -NH( $C_{1^-2}$  alkyl), -N( $C_{1^-2}$  alkyl)<sub>2</sub>, -N( $C_{1^-2}$  alkyl)<sub>2</sub>, halo, or monocyclic aryl.
- 97. (**Previously presented**) The compound of claim 96, wherein said double bond is in trans configuration.
- 98. (**Previously presented**) The compound of claim 91, wherein A is phenyl, naphthyl, indanyl, or tetrahydronaphthyl.
- 99. (Previously presented) The compound of claim 91, wherein A is phenyl optionally substituted with alkyl, alkenyl, hydroxyl, hydroxylalkyl, halo, haloalkyl, or amino.

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100. (**Previously presented**) The compound of claim 91, wherein L is an unsaturated  $C_{4^{\circ}6}$  hydrocarbon chain containing double bonds only in trans configuration, said unsaturated hydrocarbon chain being substituted with  $C_{1-2}$  alkyl,  $C_{1^{\circ}2}$  alkoxy, hydroxyl, -NH<sub>2</sub>, -NH( $C_{1^{\circ}2}$  alkyl), -N( $C_{1^{\circ}2}$  alkyl), halo, or monocyclic aryl.

101. (**Previously presented**) The compound of claim 100, wherein  $X^1$  is O;  $X^2$  is O; and each of  $Y^1$  and  $Y^2$ , independently, is  $-CH_2$ -,  $-N(R^a)$ -, or a bond.

### 102. (Currently Amended) A compound of formula (I):

$$A - Y^1 - L - Y^2 - C - X^2 - H$$
 (I)

wherein

A is a cyclic moiety selected from the group consisting of  $C_{3^{-}14}$  cycloalkyl, 3-14 membered heterocycloalkyl,  $C_{4^{-}14}$  cycloalkenyl, 3-14 membered heterocycloalkenyl, aryl, a heteroaryl; the cyclic moiety being optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, or alkylsulfonyl;

each of  $X^1$  and  $X^2$ , independently, is O or S; each of  $Y^1$  and  $Y^2$ , independently, is  $-CH_2$ -, -O-, -S-,  $-N(R^a)$ -,  $-N(R^a)$ --C(O)-O-, -O--C(O)- $-N(R^a)$ -,  $-N(R^a)$ --C(O)- $-N(R^b)$ -, -O--C(O)-O-, or a bond; each of  $R^a$  and  $R^b$ , independently

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being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

L is a straight C<sub>3.7</sub> hydrocarbon chain optionally containing at least one double bond, least one triple bond, or at least one double bond and one triple bond; said hydrocarbon chain being optionally substituted with  $C_{1.4}$  alkyl,  $C_{2.4}$  alkenyl,  $C_{2.4}$  alkynyl,  $C_{1.4}$  alkoxy, hydroxyl, halo, amino, nitro, cyano, C<sub>3.5</sub>cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C<sub>1,4</sub>alkylcarbonyloxy, C<sub>1,4</sub>alkyloxycarbonyl, C<sub>1,4</sub>alkylcarbonyl, or formyl; and further being optionally interrupted by -O-, -N(Rc)-, -N(Rc)-C(O)-O-, -O-C(O)-N(R<sup>c</sup>)-, - or -O-C(O)-O-; each of R<sup>c</sup> and R<sup>d</sup>, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl; provided that when L contains two or more double bonds, the double bonds are not adjacent to each other; that when L contains three double bonds, said hydrocarbon chain is further substituted with  $C_{1.4}$  alkeryl,  $C_{2.4}$  alkeryl,  $C_{2.4}$ alkynyl, C<sub>1.4</sub>alkoxy, hydroxyl, halo, amino, nitro, cyano, C<sub>3.5</sub>cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C<sub>1-4</sub> alkylcarbonyloxy,  $C_{1-4}$ alkyloxycarbonyl,  $C_{1-4}$ alkylcarbonyl, or formyl; and further provide when L contains zero double bonds, one double bond, or two conjugated double bonds and A is substituted phenyl or unsubstituted aryl, Y1 is not a bond or CH2, and Y2 is not a bond or CH2 or a salt thereof.